State of New Jersey

James E. McGreevey
Governor

Department of Environmental Protection
Division of Science, Research and Technology
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Bradley M. Campbell
Commissioner

July 9, 2004

Vaikko Allen
Vortechnics, Inc.
200 Enterprise Drive
Scarborough, ME 04074

RE: Interim Certification of the Vortechs® Stormwater Treatment System by Vortechnics, Inc.

Dear Mr. Allen:

In accordance with the Energy and Environmental Technology Verification (EETV) Act at N.J.S.A. 13:1D-134, the New Jersey Department of Environmental Protection (NJDEP) is pleased to issue a **Conditional Interim Certification** for the Vortechs® Stormwater Treatment System that was developed by Vortechnics, Inc. This technology is a hydrodynamic separator designed to enhance gravitational separation of floating and settling materials from stormwater. This conditional interim certification is being issued based on the New Jersey Corporation for Advanced Technology (NJCAT) initial verification report, dated May 4, 2004.

According to NJCAT's verification report, and as indicated in the attached Conditional Interim Certification Findings, the Vortechs® System sized at a treatment operating rate of no more than 40 gpm/ft^2, with an average influent TSS concentration of 187 mg/L and zero initial sediment loading, has been shown to have a TSS removal efficiency of 64% for coarse silt particles ranging from 38-75 microns. However, NJDEP downgraded the TSS removal efficiency from 64% to 50% since 1) the particle size distribution utilized for the laboratory tests was less conservative than the recommended particle size distribution, and 2) the system was not tested with an initial sediment load as recommended. In addition to downgrading the TSS removal efficiency, the following conditions will apply to the conditional interim certification:

1. The Vortechs® System should be the first component, if used as part of a treatment train (i.e. utilized in front of best management practices methods such as detention, retention, and infiltration basins, as defined in the NJ Stormwater Best Management Practices Manual).
2. The Vortechs® System shall be designed in accordance with New Jersey's water quality design storm, as required in the Stormwater Management Rules (N.J.A.C. 7:8).
3. A Quality Assurance Project Plan supporting the Technology Acceptance and Reciprocity Partnership (TARP) Tier II Protocol for Stormwater Best Management Practice

Demonstration (July, 2003) shall be submitted to NJDEP and/or NJCAT within six (6) months from the date of this Conditional Interim Certification letter.

4. Field evaluation data that is consistent with the Tier II Protocol shall be submitted to NJDEP and/or NJCAT by August 31, 2006.
5. This approval letter shall expire on December 31, 2006 unless extended by NJDEP.

To design the appropriate systems (operating at 40 gpm/ft^2) for specific applications, the design criteria in Table 1 must be used.

Vortechs System Model	Grit Chamber Radius (ft)	Grit Chamber Area (ft^2)	Design Flow Rate (cfs)
1000	1.5	7.1	0.63
2000	2.0	12.6	1.12
3000	2.5	19.6	1.75
4000	3.0	28.3	2.5
5000	3.5	38.5	3.4
7000	4.0	50.3	4.5
9000	4.5	63.6	5.7
11000	5.0	78.5	7.0
16000	6.0	113.1	10.1

Table 1. Design Criteria for Systems Operating at 40 gpm/ft^2.

For final certification of the Vortechs® Stormwater Treatment System, verified data must be generated from a full scale field demonstration utilizing the TARP Tier II Protocol. If you have any questions about this Conditional Interim Certification, please contact Ravi Patraju of my staff at (609) 292-0125.

Martin Rosen

Chief - Bureau of Sustainable Communities
and Innovative Technologies

Enclosure

c: Sam Wolfe, Assistant Commissioner, Environmental Regulation
Ernest Hahn, Assistant Commissioner, Land Use Management
Narinder Ahuja, Director, Division of Water Quality
Mark Mauriello, Director, Land Use Regulations
Larry Baier, Director, Watershed Management Program
Eileen Murphy, Director, Division of Science, Research, and Technology
Rhea Brekke, Executive Director, New Jersey Corporation for Advanced Technology